

Heuristics and complex decisions in man and horses

Invited Presentation

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Darwin's claim of differences in mental abilities between man and other animals is a matter of degree rather than of kind and appears to apply nicely to a comparison of choice behaviour in humans and equine. Humans and horses make two kinds of decisions, fast reflexive decisions based on heuristics, and slower more considered decisions that require more complex cognitive processing. Heuristic use is adaptive in that decisions based on them are most often useful in helping an organism to survive while requiring little time and cognitive effort. There is considerable evidence that there is an innate basis to many heuristics in humans as well as horses. A case will be made that the investigation of heuristics specific to horses will lead to an understanding of equine behaviour that has not been possible using traditional learning theories alone. Traditional learning theories are restricted in explaining behaviour to appeals to reinforcement regimes or to the formation of associations between novel stimuli and stimuli that cause innate reflexes, but they are of no use when behaviour is controlled by stimuli that have never been reinforced or been systematically paired with other stimuli that cause reflexive responses. For example, a horse in a two-choice discrimination task may choose a familiar stimulus which has never been reinforced over a new stimulus added to the discrimination task, simply due to the use of an heuristic that usually works -- when in doubt, choose a more familiar object over an unfamiliar one. Conflict resolution strategies provide another good example of heuristic vs. slow decision making. In both humans and horses, conflict resolution strategies are used within, but not typically between social groups. Such groups can be defined as community of interest. Depending on the resource that has to be defended, groups may well be small identities, such as human families or horse harems, or large aggregations such as herds in horses,

or religious groups or nations in humans. Fast and simple resolution is possible with stable social identities in simple environments, but more complicated and time consuming deliberative processes are required to resolve conflict over long-term resource acquisition, for decisions in complex conflicts situations and complex social settings.

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